

IIIN THE CLAIMS

Please amend the claims as follows:

Claims 1-5 (canceled)

Claim 6 (New): A process for the preparation of cephalexin, comprising contacting an aqueous solution, comprising:

(i) 7-aminodeacetoxycephalosporanic acid and

(ii) D-phenylglycinamide,

in a ratio from 1:2 to 2:1, with a coated carrier, and

wherein the carrier comprises crosslinked hydrophilic carrier polymer materials which have binding activity for ligands having nucleophilic groups, are in bead form and can be prepared by inverse bead polymerization of a monomer phase which consists of monomers and a diluent, and

wherein the monomers are:

(a) 5-40% by weight of hydrophilic monomers which are capable of free-radical polymerization, have a vinyl group and form at least 10% strength aqueous solutions at room temperature,

(b) 30-50% by weight of monomers which are capable of free-radical polymerization and have a vinyl group and an additional functional group which is able to enter into covalent bonds in a polymer-analogous reaction with the nucleophilic groups of the ligands,

(c) 20-60% by weight of crosslinking monomers which are capable of free-radical polymerization and have two or more ethylenically unsaturated polymerizable groups, and

with the proviso that a), b) and c) add up to 100% by weight, and

wherein the diluent is a mixture of methanol and water in the ratio from 1:1.0 to 1:4.0,
and

wherein the monomer phase is dispersed to droplets in a continuous phase composed of an organic solvent composed of an aliphatic hydrocarbon having 5-7 carbon atoms, and where the ratio of monomer phase to continuous phase is from 1:2.0 to 1:4.0, and in this form undergo free-radical polymerization in the presence of a polymerization initiator and of a protective colloid, with the proviso that the ratio of the monomers to the diluent is from 1:1.7 to 1:2.4, and

wherein the carrier polymer materials are coated with penicillin amidase to form the coated carrier.

Claim 7 (New): The process as claimed in claim 6, wherein the monomers are:

- a) acrylamide and/or methacrylamide
- b) glycidyl methacrylate and/or allyl glycidyl ether
- c) N,N'-methylenebisacrylamide or N,N'-methylenebismethacrylamide.

Claim 8 (New): The process as claimed in claim 6, wherein the organic solvent is cyclohexane.

Claim 9 (New): The process as claimed in claim 6, wherein the penicillin amidase is derived from *E. coli*.

Claim 10 (New): A process for the synthesis of cephalexin, comprising contacting the reactants for cephalexin with a carrier material, and

wherein the carrier material comprises crosslinked hydrophilic carrier polymer materials which have binding activity for ligands having nucleophilic groups, are in bead form and can be prepared by inverse bead polymerization of a monomer phase which consists of monomers and a diluent, and

wherein the monomers are:

(a) 5-40% by weight of hydrophilic monomers which are capable of free-radical polymerization, have a vinyl group and form at least 10% strength aqueous solutions at room temperature,

(b) 30-50% by weight of monomers which are capable of free-radical polymerization and have a vinyl group and an additional functional group which is able to enter into covalent bonds in a polymer-analogous reaction with the nucleophilic groups of the ligands,

(c) 20-60% by weight of crosslinking monomers which are capable of free-radical polymerization and have two or more ethylenically unsaturated polymerizable groups, and

with the proviso that a), b) and c) add up to 100% by weight, and

wherein the diluent is a mixture of methanol and water in the ratio from 1:1.0 to 1:4.0, and

wherein the monomer phase is dispersed to droplets in a continuous phase composed of an organic solvent composed of an aliphatic hydrocarbon having 5-7 carbon atoms, and where the ratio of monomer phase to continuous phase is from 1:2.0 to 1:4.0, and in this form undergo free-radical polymerization in the presence of a polymerization initiator and of a protective colloid, with the proviso that the ratio of the monomers to the diluent is from 1:1.7 to 1:2.4.

Claim 11 (New): A carrier material comprising crosslinked hydrophilic carrier polymer materials which have binding activity for ligands having nucleophilic groups, are in bead form and can be prepared by inverse bead polymerization of a monomer phase which consists of monomers and a diluent, and

wherein the monomers are:

(a) 5-40% by weight of hydrophilic monomers which are capable of free-radical polymerization, have a vinyl group and form at least 10% strength aqueous solutions at room temperature,

(b) 30-50% by weight of monomers which are capable of free-radical polymerization and have a vinyl group and an additional functional group which is able to enter into covalent bonds in a polymer-analogous reaction with the nucleophilic groups of the ligands,

(c) 20-60% by weight of crosslinking monomers which are capable of free-radical polymerization and have two or more ethylenically unsaturated polymerizable groups, and

with the proviso that a), b) and c) add up to 100% by weight, and

wherein the diluent is a mixture of methanol and water in the ratio from 1:1.0 to 1:4.0, and

wherein the monomer phase is dispersed to droplets in a continuous phase composed of an organic solvent composed of an aliphatic hydrocarbon having 5-7 carbon atoms, and where the ratio of monomer phase to continuous phase is from 1:2.0 to 1:4.0, and in this form undergo free-radical polymerization in the presence of a polymerization initiator and of a protective colloid, with the proviso that the ratio of the monomers to the diluent is from 1:1.7 to 1:2.4.